Audio Line
Interactive Digital

MicroPlayer mkII

Audio player MP3/Wav

USER MANUAL

Table of contents

A - Safety instructions	1
B - Product information	3
1 - Product presentation	4
2 - Functionnalities	4
3 - Installation	5
3.1 - Connections	7
4 - Operating mode	9
4.1 - Organisation of the folders	9
4.2 - Organisation of files inside folders	14
5 - Setup file	18
5.1 - Assign a device number - #ID:xxx	18
5.2 - Output volume setting - #VOLUME:xx	18
5.3 - Energy saving mode (stand by) - #POWER:x	19
5.4 - Configuration of the speed of the RS232 - #BAUDRATE:xxxx	19
5.5 - Monitoring of the player through RD232 - #RS_ MONITORING:x	19
5.6 - Choose of the playback folder when powering - #BOOT:xxx	20
5.7 - Assign particular functions to the inputs - # INPUTxxx:function	21
5.8 - Assign particular functions to buttons - #BUTTONx:function	22
6 - RS232 serial link protocol	24
7 - From the MicroPlayer to the MicroPlayer MKII	28
Annexe A - Characteristics	29
Annexe B - Functionalities	30
Annexe C : Infrared remote control	31

ID-AL products are exclusively manufactured by Waves System
LA VILLE EN BOIS - 44830 BOUAYE - FRANCE
Sales and information: +33 2 40 78 22 44
E-mail : info@id-al.com - Web site: http://www.id-al.com

Technical department : support@wsystem.com

Technical support :
For a detailed list of the technical support options, we suggest you to visit our site www.id-al.com.

Information in this manual is subject to change without notice and do not represent any commitment from Waves System. The equipment described in this manual is supplied under condition of the terms of license specifying the legal use conditions. This manual can't be reproduced or used, in whole or in part, in any form and by any mean, for other use than private, without the written permission from Waves System.

ID-AL is a trademarks of Waves System.

CAUTION! DO NOT EXPOSE TO HUMIDITY & DUST!
Unplug the power supply cable before any servicing
FOR YOUR SAFETY, PLEASE READ THE USER'S GUIDE CAREFULLY BEFORE OPERATING YOUR PLAYER.

A. SAFETY INSTRUCTIONS

A.1 CE marking
The CE marking is found on the nameplate, at the rear side of the device. It certifies the conformance of the device with the low voltage CE Directive, according to the EN 55022 standard, and the Electromagnetic Compatibility Directive 61000-4-x.

A.2 Directives
• The requirements related to the electromagnetic compatibility and low voltages directive are met.

A.3 Overview
• The user manual is an integral part of the product. It must always be kept handy & close by. Proper usage conforming to the product intended purpose involves strict compliance with the instructions given in this manual.

In the event of return of the equipment, the user manual should be handed over to the new purchaser. The staff should receive instructions concerning the proper usage of the device.

• Only usage of genuine parts ensures perfect safety for the user and correct operation of the device. Moreover, only accessories mentioned in the technical documentation or explicitly approved by the manufacturer must be used. In the event of usage of accessories or consumable products from other brands, the manufacturer cannot stand guarantee for the correct and safe operation of the device.

• Damages caused through usage of accessories or consumable products from other brands will not entail right to any benefit under the terms of warranty.

• The manufacturer will be liable for the safety, reliability and functioning of the product as long as the assembly, settings, modifications, extensions and repairs have been carried out by the manufacturer or a company approved by the manufacturer and if the device is used in accordance with the instructions mentioned in this manual.

• The player complies with the technical safety standards in force at the date of print of this manual. All rights reserved for the electrical diagrams, procedures, names and devices mentioned herein.

• Any reproduction of the technical documentation, even partially, without the written authorization from Waves System is prohibited.

A.4 General Safety instructions
This device has been shipped out from our facilities in perfect working condition. In order to preserve these conditions, for safety and to avoid any risk of accidental bodily injury, the user must imperatively follow the safety instructions and read the 'Caution!' messages included in this manual.

This device, made by Waves System, has been designed in a way that practically eliminates any risk if it is used in accordance to its intended purpose. Nevertheless, with a concern for safety, we would like

to draw your attention to the following instructions:
• When using the device, comply with all local rules and regulations in force. Any modification or

conversion of the device automatically entails loss of the homologation. The operation of a modified device is liable to a penalty. In the interest of occupational safety, the operator and the user are held responsible for complying with the regulations.

• Keep the original packing for a possible product re-shipment. Also ensure to keep the packing material out of children's reach. Only this original packing ensures optimal protection for the product during transportation. If a product reshipment appears to be necessary during the guarantee period, Waves System is not liable for any ensuing damages arising during the transportation and attributable to a defective packing.

• This device is used to broadcast audio files. It should be used only by persons whose training or knowledge ensures proper handling.

• Before every use, the operator must check that the device is in perfect working condition.

• This product must not be used in places where there is a potential explosion risk. Besides, it must neither be used in an environment favouring combustion nor in a humid or excessively hot or cold location.

A.5 Safety instructions against risks due to electric currents

• The device must be connected to a grounded AC power outlet or a European standard outlet installed as per good professional practices.

• Before connecting the device, check that the power supply voltage and frequency match the specifications indicated on the device.

• Before powering, check that the device and cables are not damaged. Damaged cables and connections must immediately be replaced.

• Never allow the power cords to come in contact with other cables. Handle the power supply cable as well as all other cables connected to the mains with extreme care.

• Always connect the plug-in connector in the end. Ensure that the On/Off switch is in 'Off' position before connecting the device to the mains. The mains outlet must remain accessible after the installation.

• Check the device and its power supply cable from time to time. Disconnect the device from the mains when it is no longer used or for the purpose of maintenance.

• Handle the power cord by using the plug-in connector only. Never remove the plug-in connector by pulling the power cord.

• Electrical connection, repairs and maintenance must be carried out by qualified personnel.

• Do not switch on or switch off the device within a short span of time as this will reduce equipment life.

A.6 - Terms of use:

• This product has been designed for indoors use only.

• If this device has been exposed to very high temperature fluctuations (e.g.: after transportation), do not connect it immediately. The condensation formed inside the device could damage it. Allow the device to attain ambient temperature before connecting it.

• Do not shake the device, avoid sudden movements during its installation or handling.

• When selecting the spot for installation of the player, ensure that it is not exposed to a high source of heat, humidity or dust. There should not be any cables lying around as they might jeopardise your & others safety.

B. PRODUCT INFORMATION

B.1 Correct usage

The player is used to broadcast audio/video files automatically.
Correct usage involves compliance with the instructions given in this manual as well as with the requirements concerning installation.

B.2 Incorrect usage

Any other usage or usage beyond the scope of this application is considered as incorrect usage. The manufacturer shall not be liable for the damages ensuing from it. The user shall bear full responsibility for the risks incurred.

B.3 Delivery details

MicroPlayer mkII
External power supply and its power supply cable
Remote control
User's manual

B.4 Specifications

Audio/video Player model : MicroPlayer mkII
Nominal electrical values of the power supply connection
Voltage (V) 100 to 240
Frequency (Hz) 50-60
For details see Annex B

B.5 Installation

The device must be installed in a dust free area.
Do not install the device directly against a wall. To avoid overheating, the ventilation openings must not be blocked. Take care to leave an empty space above the ventilation slits.

B.6 Electrical connection

Before activation, check whether the mains voltage matches with the voltage indicated on the rating plate.

1 - Présentation

MicroPlayer MKII reads WAV and MP3 audio files. This standalone player can read files automatically according to a broadcast schedule or upon triggering by external events (input dry contact, RS232,…). Files are stored on a SD/SDHC memory card or on a USB flash drive.
MicroPlayer MKII broadcasts music, sounds or messages in many environments like museums, showrooms, shop windows, attractions,touristic places, exhibitions..

2 - Functionalities

Interactivity: MicroPlayerMKII is an interactive player that reacts depending on events.
- Playback pattern is defined by the name of files or folders
- Electrical contacts: 4 inputs combinable up to 15 inputs to trigger files through sensors, push-buttons,relays …
- 2 outputs can control Leds, relays, motors or any other external equipment thanks to Mosfet up to 500mA switch.
- Commands through the RS232 serial link. A simple protocol is used to send instructions to the player.
- Infrared sensor allows the use of a remote control.

Autoplay: MicroPlayer MKII starts automatically on powering on. This function is configurable and can be disabled.

Playback: The audio files stored on a SD/SDHC memory card - USB flash drive can be organized in a particular way to define playback pattern. The playback pattern is defined by the names of the files and the folders, allowing a wide flexibility of use.

Audio output: 2 types of output are proposed.
- A line level stereo audio output on a RCA standard connector
- An amplified stereo output on a removable terminal block (RTB).

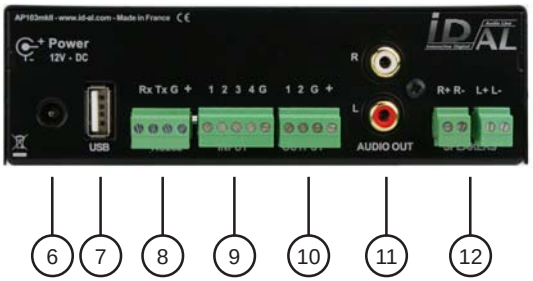
Power supply: A 12v external power supply is required.
The player is protected against polarity reversals and against usage, by mistake, of an alternative power supply instead of the D.C. power supply provided.
Caution! The player can accept a tolerance of the power supply voltage between 10 & 15V. Apart from this voltage range, the player can be damaged.
The input supply is transferred to the RS232 connector and the output terminal (RTB) to supply the connected accessories.

The power of the PSU determines the output power of the amplifier. When a line level output is used , a 500mA (6w) power supply is adequate to run on the player. When the amplified output is used for large powers, a supply of at least 3,45A(45w) is obligatory. If you use a PSU of an inferior power, you can have a very poor sound and also a overheating PSU till broken down.

Serial link RS232: MicroPlayer MKII can be controlled by a PLC, a computer, a remote control using a serial link. MicroPlayer MKII receives data on its Rx input and sends datas on its Tx output. A specific protocol is described in this manual.

3 - INSTALLATION

1 - Amplifier volume
2 - General volume (configurable buttons)
3 - SD/SDHC memory card slot
4 - Infrared sensor
5 - Activity led



6 - Power of the supply of the player
7 - USB host for flash drive
8 - Serial link RS 232
9 - Inputs on dry contact
10 - Outputs on Mosfet
11 - Line level audio ouput
12 - Amplified outputs for speakers

First use: MicroPlayer MKII is factory setting configured with parameters by default and the player must operate on inserting a prepared media dedicated to (chapter 4).

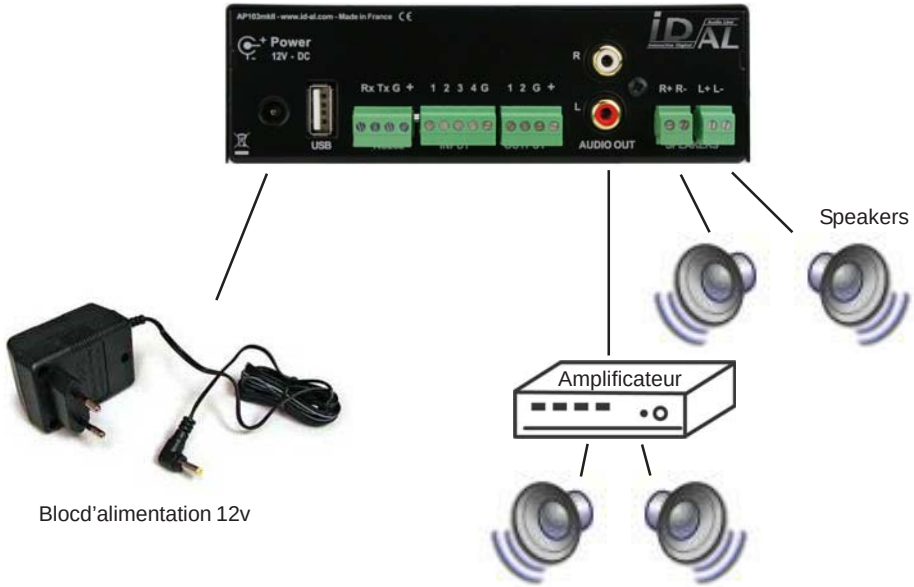
1 - Insert a quality SD/SDHC memory card or a prepared USB flash memory.

Memory card: Choose a quality SD/SDHC, insert it in its slot till the stop without overdo. To remove, gently push on the memory card to unlock it.

USB connector: You can connect a USB flash drive

Note: If a SD/SDHC card and a USB flash drive are both connected, the SD/SDHC card will have priority and the USB stick will not be used

2 - Connect speakers or a sound system to the audio output and switch on the player thanks to the PSU



Power Supply Unit: We recommend you to use the PSU provided with the player. If you use another PSU or a battery, you have to respect the 12V specified voltage although the player can be power supplied between 10V and 15V. The power consumed depends on the power level of the amplifier.

Preparation of the medias:

Brand new SD/SDHC memory card and USB flash drive are usually "FAT" or "FAT32" formatted.
If you must format a card or a stick, select the FAT or FAT32 format depending on memory size. (FAT32 above 512Mb).Other types of formatting do not work.

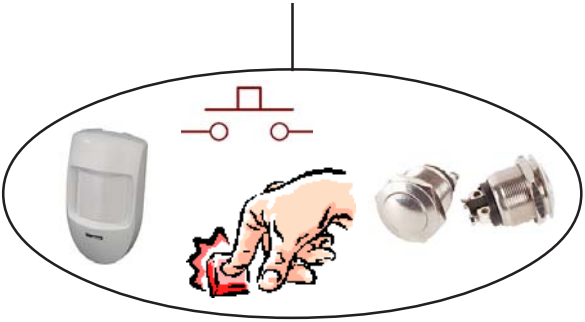
If you use Windows PC computer, latest versions do not allow to format high capacity medias(>32Go) system FAT. In this case you must obtain a formatting software. Many software are available , some free, others paying that you will easily find on internet.

3.1 - Connections

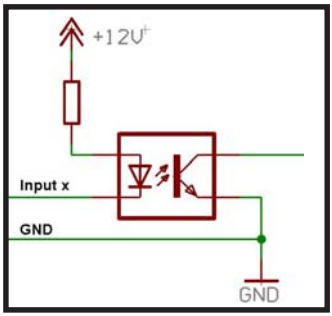
3.1.1 - Inputs connections

Up to 4 triggerings, the connections are direct, beyond it is necessary to make combinations with diodes. The inputs match with a binary representation of the files to be triggered. You can also use the optional extension card.

Optionnal extension board

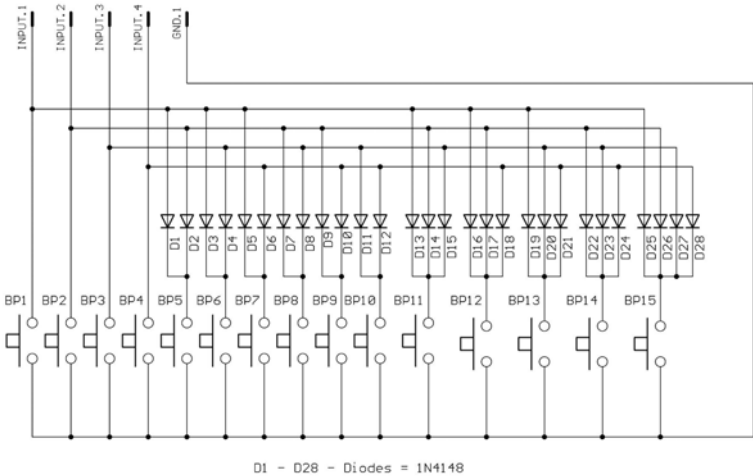


Internal input schematic



Example of a 15 inputs connection :

	Folder	Input
		4321
BP1	1	0001
BP2	2	0010
BP3	4	0100
BP4	8	1000
BP5	3	0011
BP6	5	0101
BP7	9	1001
BP8	6	0110
BP9	10	1010
BP10	12	1100
BP11	7	0111
BP12	11	1011
BP13	13	1101
BP14	14	1110
BP15	15	1111

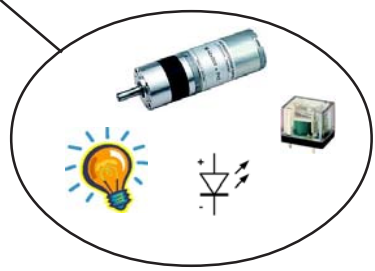

INPUT.1
INPUT.2
INPUT.3
INPUT.4
GND.1
D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 D24 D25 D26 D27 D28
BP1 BP2 BP3 BP4 BP5 BP6 BP7 BP8 BP9 BP10 BP11 BP12 BP13 BP14 BP15

D1 - D28 - Diodes = 1N4148

MicroPlayer - 15 x push button

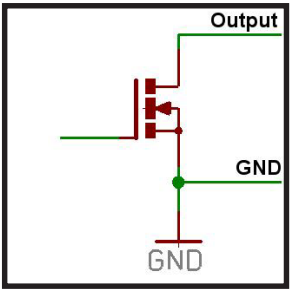
3.1.2 - Outputs connection

MicroPlayer MKII offers 2 electronic switch outputs thanks to Mosfet transistors offering a switch power up to 500mA per output.
It is also possible to connect Leds, motors, relays or any other compatible material.

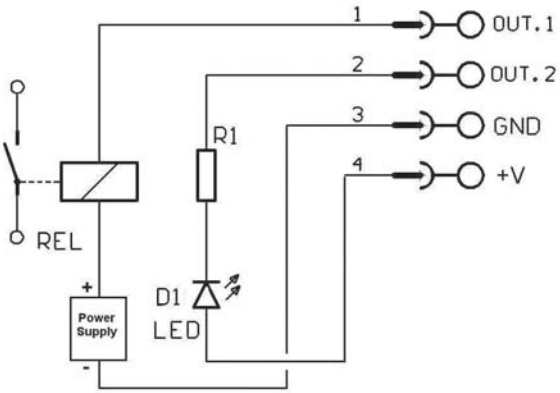


Note: V+ is a transfer of the PSU. With a 12V PSU, V+ will also be 12V. The provided power will exceed 500mA.

Internal Scheme of output of the player



Example of a 2 inputs connection



Switching features:
- Voltage Drain-Source max: 20V
- Power Drain-source max 500mA(2A en impulsion)
- Resistance switched Drain-Source 0,1 Ohms.

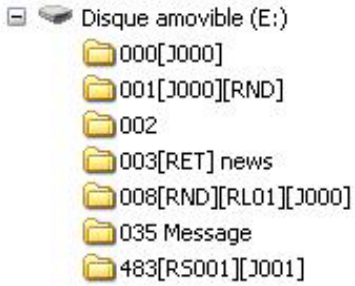
4 - Operating mode

Compatibles files:
.MP3: audio files MP3 format (see annex C)
.WAV: audio filesWav format (see annex C)

The file and folders names define the playback mode. The files and folders must be stored and copied according to a specific organisation described below.

4.1 Organisation of the folders:

Only ONE folder level is allowed at the root. The folder names are composed of 3 digits (000 to 999) followed by optional parameters and the name of your choice.
You should not use special or accentuated characters
.
Example :
001
003 [J002]
034 folder name
247 [V+02] [SEQ] my folder



● **The first three digits represent the folder No and therefore its main name**
Folders are numbered from 000 to 999.

Example :
000 : Folder N°000 - "Autoplay" folder which is automatically played when the device is powered on.
001 : Folder N° 1
034 : Folder N° 34

The folder number is used to define the playback order, it identifies the folder to use during a jump or an input triggering. You can use any number between 000 & 999.

IMPORTANT : The 4 input contacts allow the triggering of the folders numbers corresponding to these 3 digits, as per a binary order from 001 to 015. It is possible to modify the numbers of the triggered folders by editing file config.txt. (See chapter 5).

Folder 001- > Input 1
Folder 002 - >Input 2
Folder 003- > Input 1+2
Folder 004- > Input 3
Folder 005- > Input 1+3
Folder 006- > Input 2+3
Folder 007- > Input 1+2+3
Folder 008 - >Input 4
Folder 009 - >Input 1+4
Folder 010 - >Input 2+4
Folder 011 - >Input 1+2+4
Folder 012 - >Input 3+4
Folder 013 - >Input 1+3+4
Folder 014 - >Input 2+3+4
Folder 015 - >Input 1+2+3+4

Special case: Folder 000 is the folder which will be played by default when powering on. When powering on, presence of this folder is checked ; if it is present, the player plays files of this folder. If this folder is missing, the player turns in to sleep mode.

Note: The folder which is read by default when powering on can be modified in the configuration menu.

Additional Parameters - Optional Tags:

To modify the conduct of the player, you can add optional parameters within the folder name. These parameters are boxed with the symbols "[" "]". You can add several parameters within the folder name.

[Jxxx] - Jump to another folder after reading the current folder.
[RET] - Returns to the previous folder after reading the current folder.
[RND] ou **[SEQ]** - Specifies random or sequential playback mode for the current folder.
[RLxy] - Activate the output contacts
[V+xx] ou **[V-xx]** - Controls the volume level of the folder
[NT] Or [DT] – Define interruption modes
[RSxxx] – Sending of RS232 codes

Note: If no optional parameter has been indicated, the player reads randomly the folder in full and then stops. The folder can be intterupted

● **[Jxxx]** – **Assign the folder No. to read after the reading the current folder**.
By adding this parameter within the name of the folder, you define the conduct of the player after reading the current folder so that it starts reading another folder for example. This option is also used to read a folder in a loop mode .
Example:
001 [J002]: Jump to folder 002 after reading folder 001
003 [J003]: Jump to folder 003 after reading folder 003-> create a loop of the 003 folder
008 [J023]: Jump to folder 023 after reading 008
458[J999] : Jump to folder 999 after reading folder 458

To play loop files on powering on, you will use the folder 000 and the tag [J000] (value by default that can be modifiable through config file)
Exampe:
000[000]

● **[RET] - Returns to the previously read folder after reading the current folder**.
You are reading a folder. A command arrives in order to read another folder having [RET] tag. The player jumps in the new folder, reads the content of this new folder and once all files are read the player goes back to the reading of the previous folder. You can use this function to broadcast a same message after the reading of folders.

Several different folders can appoint a same folder in order to come back to the folder that has called him.

Example:
001 [J100]: After reading folder 001, jumps to folder 100
002 [J100]: After reading folder 002, jumps to folder 100
100 [RET]:After reading folder 100, returns to the previous folder (001 or 002)

In the above example, after reading folders 001, 002, a jump to folder 100 is made to read the content. After reading folder 100, the reading occurs in the previous folder, it has to say the folder recently called.

● **[SEQ]** or **[RND]** - Specifies sequential playback mode of the current folder. By default or without parameter, the folder is read in a random mode.
[SEQ]: reading in a numerical order
[RND] or without any parameter : reading in a random mode

Example:
001 [SEQ]: read folder 001 in a sequential numerical order and stop at the end of the folder.
002[RND][J002]: reading of the folder 002 in a random mode or in a loop.
003[J001]: reading of the folder 003 in a random mode then jump to folder 001.

By choosing [SEQ] you select the sequential mode, meaning a reading in a defined order. The sorting is made through a numerical order it has to say in the order of the numeros of the names of the files (see next chapter related to files organisation within the folders for the naming details).
In a defined order [SEQ], the files which are not numbered are ignored.
The folders which do not comply with the naming rules are ignored.

By default, if optional parameter is not present, the reading is made in a random mode.

● **[[RLxy] - Enable or disable the 2 outptut contacts**
Each folder can directly activate different output contacts without any additional programming. You can switch on a light, motors or any other actions depending on the folder read.

[RLxy]: x,y represent the 2 outputs (x=output 1 – y= output2) and can accept 3 values

x or y = 0 : outputs are disabled
x or y = 1 : outputs are enabled during the reading of the current folder
x or y = 2 : outputs are permanently activated. An order is necessary to inactivate outputs.

Example :
000[RL00][J000]: the folder 000 is read in a loop on powering on. Outputs are disabled.
001[RL10][J000] : enable output 1 when the reading of the folder 001 occurs then go back to folder 000 with disabling output 1 after reading folder 001.
002[RL02][J003] : enable pemanently the output 2 during the reading of the folder 002 then jump to folder 003 without disable the output 2.
003[J003] :

Output contacts are switched from the beginning of the reading of the folder. If the files within the directory have an activation or inactivation option of the outputs contact, the different outputs will evolve.

● **[V+xx] ou [V-xx]** – **Volume setting**
The name of the folder can act on the output volume. This function is used to broadcast messages loud more or less than others files.
Example :
001[V+05]: increase the volume level from 5 steps during the folder
001[V-03] : decrease the volume level form 3 steps during the folder

At the end of the reading of the folder, the volume level goes back to its previous level.
- If the variation values exceed the minimum or maximum values of the player, the levels are settled to their maximum or minimum.
- If the volume level is yet to its maximum or minimum, the instruction is ignored.

● **[NT] or [DT]** - **This option defines the interruption mode of the folder currently read.**
If these options are registered in the folder name, the read file cannot be interrupted and instructions received are ignored or executed at the end of the file.

Without this option, the reading of the currently read directory can be interrupted at any time by an external action. (input, Ethernet, RS232 ...)

Example:
001 [NT] - The folder can NOT be interrupted.
In that case, an action on one of the input contacts through RS232 or other is ignored and the reading of the current file is not stopped. Caution! The action is not memorised and the triggering information is lost.

001 [DT] - Interruption instruction is memorised and will be executed at the end of the folder.
An action on one of the input contacts through RS232 link is memorised but the reading of the current file is not stopped. Caution! If several actions occur while reading the file, the history of actions is not memorised and triggering information is lost. Only the lastest action is memorised and executed.

● **[RSxxx] – This tag allows to send octets onto the RS232 output.**
When the folder is called, a list of bytes is transferred by the serial link in order to control other devices (another player, switching grid, projector, ..)
The bytes to send are included in a text file that will be especially created for.
Value by default : 19200 Bauds (modifiable through the setup file) - 8 bits – no parity – 1 bit start – 1 bit stop
[RSxxx]: xxx appoint the number of the line of the file serial.txt that must be sent (value from 001 up to 999)
The file definition of the bytes to send must be named : serial.txt
This file will be copied at the root of the media (memory card/flash drive)

This file is a text file (raw text without page setting) that can be created with any easy text editor like « notepad « from windows or similar. When recording, use «ANSI» coding . Do not use special characters.

The file «serial.text» of RS232 codes is a text file containing one or several lines. Each of these lines will include a sequence of bytes expressed in hexadecimal and separated by a space (from 00h to FFh). You must only indicate the two characters of the wished hexadecimal value.

Each beginning of line of this file should present the following parameter:

xxx : the xxx number of the line containing the bytes to send related to the xxx of the tag.

[RS002]-> line # 002 – the tag [RS002] will send the sequence of bytes of the line
002 of the serial.txt file.

The separator between each byte is a space.

Example of a line contained in the sreial.txt file.
#001: 45 85 63 21 78 A5 B2
#002: 98 75 21 35 45 98
#100: 21 35 45 78 A5 B2

It is also possible to add comments in the file by using two times the type «/» (slash)

// example file
#001: 05 A1 FF E4 // comment in the line
#005: 45 85 63 21 78 A5 B2
#100: 98 75 35 45 98 // my command

//other command
#064: 48 25 Ce 8b

#128: 4C 8E D9 5A //
#999: a4 Fc 48 3e 8B
// comments at the end of the file

An example to allow the triggering of the reading of the folder 001 of another MicroPlayer MKII.
#001/ 80 01 01

Example of tag:
001[RS001]: Sending of the bytes of the line #001 of the file serial.txt on reading of the folder 001
002[RS064]: Sending of the bytes of the line #064 of the file serial.txt on reading of the folder 064

- **Specific conduct:**

-If a folder is missing but a command designates this folder, the command is ignored.
-When triggering designating a folder that does not contain a file and if a name contains an optional tag, this option is executed. If no playback option (for example a jump)is indicated, the player turns into stop mode.

4.2 Organisation of files inside folders.

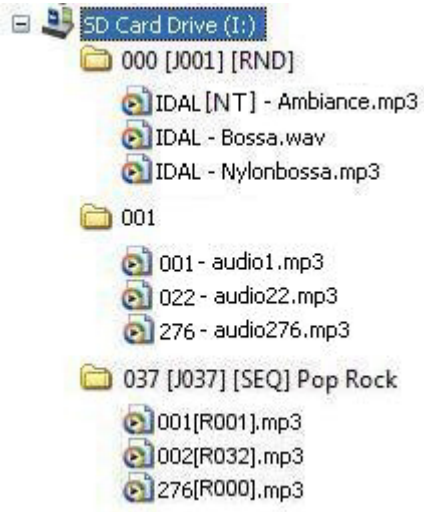
Like for folders, files name define the playback conduct.

Note: The naming of the files is free if the reading is in a random mode. («RND» option or no option in the folder name). In this case, all the files will be read and can be interrupted.

In a sequential mode, you should number the files.The names are composed of 3 digits (000 to 999) and of a name of your choice. Optional informations (tags) can be added following your need, like the interruption of the file or the triggering of the outputs.

Example:
001 [J367] my message.mp3
063 [R020] file name.wav
845 [V+12][RL01] my file.mp3"
MY SONG [NT].wav

Note: In sequential mode (SEQ), if numbered and non-numbered files are present, only the numbered files will be read. In random mode, all the files be read.



● **The first three digits represent the file number and thus its principal name from 000 to 999.**

Example:
001.mp3 - file No.001
063.wav - file No.063

If the folder indicates random mode [RND], the files don't have to be numbered and playback will be in random mode. In sequential mode [SEQ], file are read in the first three digits order and the non-numbered files are ignored.

Optional parameters

To modify the conduct of the player, you can add optional parameters in the file name. These parameters are boxed by the symbols «[« and «]». You can use several parameters in the file name.
[Jxxx] - Jump to a folder after reading the current file.
[NT] or **[DT]** - The file can not be interrupted or the action is memorised to be executed at the end of the file.
[RLxy] – Enables or disables output contacts
[RSxxx] – Sending of a sequence of bytes through RS232 link

Note: Without any option, the files are read the ones after the others according to the selected mode (random or sequential) and can be interrupted at any time by external action.

● **[Jxxx]** designates the folder number to use after reading the current file.
By adding this parameter within the file name, you define the conduct of the player at the end of the reading of the current file in order to read another file.
If the destination folder does not exist, the action is ignored.
If the destination folder do not have any file , the player turns into stop mode.
Example:
My file [J002].mp3 - Jumps to folder 002 after reading file.
003 [J023][RL02].mp3 - Jumps to folder 023 after reading file 003 and enable output2.
034 [J034].wav - Jumps to folder 034 after reading the file. It's not a loop with the file 034 but a jump to folder 034.

This function allows for example to survey a file in order that he is followed by a Jump.
Several files can designate the same directory of jump.
Example :
001[J100].mp3 – after the reading of the file 001, Jump into folder 100
002[J100].wav – After the reading of the file 002, Jump into the folder 100

● **[RLxy] enables or disables the 2 output contacts**
Each file can activate output contacts directly without any additional programming.
You can switch on lights, run a motor or any other action according to the files read.
[RLxy]:x,y represent the 2 outputs (x= output 1 – y = output 2) and can be from 3 values

x or y = 0 : outputs are disabled
x or y = 1 : outputs are enabled all along the reading of the current file.
x or y = 2 : outputs are permanently enabled. Another instruction is needed to disable outputs.

Example :
My file [RL00].mp3 : read the mp3 file. Outputs are disabled
001[RL10].wav – Enable output 1 during the reading of the file 001.wav then go on the reading of the following file with desactivating output 1.
Message[RL02].mp3 – Enable output 2 during the reading of the file then go on reading of the following file without disabling output 2.
004[RL21].wav – Enable the two outputs during the reading of the file 004.wav then go on the reading of the following file without disabling output 1 and with disabling output2.
Output contacts are switched at the beginning of the reading of the file and disabled at the end of the file.

● **[NT] or [DT]** - This option defines the interruption mode of the file currently read .
If these options are registered in the file name, the file cannot be interrupted and instructions received are ignored or executed at the end of the file.
Without this option, reading of the current file can be interrupted at any time by an external action except if the option is included within the name of the file.

Example:
001 [NT].mp3 - The file can NOT be interrupted.

An action on one of the input contacts, through RS232 link or any other is ignored and the reading of the current reading is not stopped. Caution! The action is not memorised and the triggering information is lost.

001 [DT].mp3 - The instruction of interruption is memorised and will be executed at the end of the file. An action on one of the input contacts, through RS232 link or any other is memorised and the reading of the current file is not stopped. Caution! If several actions occur while reading the file, the history of actions is not memorised and the triggering informations are lost. Only the last action is memorised and executed.
The files that can be interrupted and those that can not be interrupted can coexist in the same folder.

● **[RSxxx] – This tag allows to send bytes through RS232 output.**
This tag allows to send bytes onto the RS232 output. When the file is called, a list of bytes is transferred by the serial link in order to control other devices (another player, switching grid, projector..)
The bytes to send are included in a text file that will be especially created for that purpose.
Value by default : 19200 Bauds (modifiable through the setup file) - 8 bits – no parity – 1 bit start – 1 bit stop

[RSxxx]: appoint the number of the line of the serial.txt file that must be sent (value from 001 up to 999)

The file definition of the bytes to send must be named : serial.txt
This file will be copied at the root of the media (memory card/flash drive)

This file is a text file (raw text without page setting) that can be created with any easy text editor like « notepad « from windows or similar. On recording, use «ANSI» coding . Do not use special characters.

The file «serial.text» of RS232 codes is a text file containing one or several lines. Each of these lines will include a sequence of bytes expressed in hexadecimal and separated by a space (from 00h to FFh). You must only indicate the two characters of the wished hexadecimal value.

Each beginning of line of this file should present the following parameter:

#xxx : xxx number of the line containing the bytes to send in connection with the xxx of the tag.

[RS002]-> line #002

The separator between each byte is a space.

Example of a line contained in the serial.txt file.
#001: 45 85 63 21 78 A5 B2
#002: 98 75 21 35 45 98
#100: 21 35 45 78 A5 B2

It is also possible to add comments within the file by using two times the type «/» (slash writer)

// example file
#001: 05 A1 FF E4 // comment in the line
#005: 45 85 63 21 78 A5 B2
#100: 98 75 35 45 98// my command

//other command
#064: 48 25 Ce 8b

#128: 4C 8E D9 5A //
#999: a4 Fc 48 3e 8B
// comments at the end of the file

An example to trigger the reading of the folder 001 of another MicroPlayer **MKII**.
#001/ 80 01 01

Example of files:

001[RS001]: Sending of the bytes of the line #001 of the serial.txt file on reading of the file 001
002[RS064]: Sending of the bytes of the line #064 of the serial.txt file on reading of the file 064

5 - Setup file

Some functionalities are only accessible via a setup file. This file is a text file (raw text without page setting) that can be created with any easy text editor like « notepad « from windows or similar. On recording, use «ANSI» coding . Do not use special characters.
This configuration file must be named : config.txt and have to be copied on SD memory card or USB flash drive and located at the root of the media.
If this file is missing, the factory setting values will be implemented by default.

The configuration file allows to make the following settings:
5.1 **- #ID:xxx** – Assign a number to the MicroPlayer to use it with others players through RS232
5.2 - **#VOLUME:xx** – Define the output volume used on powering the player.
5.3 **- #POWER:x** – turn into «energy saving» mode when the player is not reading
5.4 - **#BAUDRATE:xxxx** – Modify the speed of the serial port RS232
5.5 - **#RS_MONITORING:x** – Configure the monitoring mode of the serial link RS232
5.6 - **#BOOT:xxxfonction** - Define the reading folder of the input contacts
5.7 - **#INPUTxx:fonction** – Configure functions of the input contacts
5.8 - **#BUTTONx:fonction** – Assign other functions to the 2 front buttons.

Note: The command layout is made of « # «symbol, followed of a key word, followed by « : « symbol and at last the associated value. The commands can be entered in the order you wish. If a command is missing , the player will use by default the factory settings.

5.1 - Assign a device number - #ID:xxx

It is possible to make several MicroPlayer MKII coexist in a same installation and to make them communicate amongst themselves from a main device through RS232. For this a number is assigned to each MicroPLayer mkII among the choice of 127, meaning that 127 MicroPlayer mkII can be use in the same time (see chapter 6).
Command line :

#ID:xxx xxx a number between 001 and 127

Example:
#ID:023 Assign number 23 to the choosen player

If the line is missing , the factory setting value by default is used , it has to say 001 to assign player 001.

Note: several player can have the same number. All the player having the same number will react same time.

000 is a particular case and should not be used. When code 000 is sent through serial link, it means that all the players react on command sent in an overall way.

5.2 - Output volume setting - #VOLUME:xx

On powering , it is possible to set the output volume level. This volume can be modified by the front buttons, RS232 or infrared remote control.
The volume setting goes from 00 to 64, it means 64 steps.
00 is minimum volume setting (mute) and 64 is the maximum volume setting.

Command line:

#VOLUME:xx xx = a value between 00 and 64

Example :
#VOLUME:18 the volume will be from 18 on powering

If the line is missing the last known value by the player will be used.

5.3 - Energy saving mode (stand by) - #POWER:x

MicroPlayerMKII can turn into energy saving mode during its standby mode. It is possible to use a battery as a power source. The player turns into this mode automatically when he does not read a file. Only the input contacts are watched. When an input contact is detected, the player « wakes up» et and executes the command.

Note: When the folders contain numerous files, the waking time is lenghtened.

Command line:

#POWER:x x = value 0 or1
0 = normal mode withon saving mode management
1 = energy saving mode

Example : #POWER:1 The player is in energy saving mode

If the line is missing, the factory setting value is used by default, it has to say 0, normal mode without energy saving management.

5.4 Configuration of the speed of the RS232 - #BAUDRATE:xxxx

By default, the serial link RS232 in and out is 19200 Bauds; With this option you can modify this value.

Command line:

#BAUDRATE:xxxx x = a value among 9600, 19200, 38400

Example :
#BAUDRATE:9600 The player send and receive 9600 bauds.

If the line is missing, the factory setting by default is used it has to say 19200 bauds.

5.5 Monitoring of the player through RD232 - #RS_ MONITORING:x

The MicroPlayer MKII has one serial input and one serial output RS232 standard.
This link can be used to control the player but also to watch him.
Four configurations are possible to define the kind of outgoing link.

- **Mode 0 :** no monitoring , No data sent by the player

- **Mode 1** : «Daisy Chain» mode

This mode allows to chain up the players the ones after the others with one only RS232 link. The serial Tx output of a player is connected to a serial Tx input of the next one and so on. When the first player

receives an instruction, this same instruction is sent to its output and so on. Caution , when numerous players are chained up a latente period can exist at the end of the chain.

● **Mode 2:** Monitoring mode
In this mode, the player send onto its Tx serial output, some information on its status.(see previous chapter describing the procedure)
An external device can therefore receive informations to know if the player is in a reading mode or in a stop mode. These functions can be used to check the good functioning of the player.

● **Mode 3:** Advanced monitoring mode
The advanced mode has the same functions that the standard monitoring mode and the additional function is the regular sending of informations on its status. A frame is sent every 250 ms describing the status of the player among 3 possibilities:

1 - Stop - send a frame indicating that the player does not read and wait for a command.
2 - Playback - send a frame indicating that the player reads a file
3 - Other -No frame sent : the player is not available. The memory card is missing or defective, power supply default or the player is out of order.

This mode is used in a context of security message management. A frame fault reports an error and allows to intervene to solve the default

Command line:
#RS_MONITORING:x x = a value 0,1, 2 or 3
0 = no monitoring
1 = "daisy chain" mode
2 = monitoring mode
3 = advanced monitoring mode

Example :
#RS_MONITORING:1 The player is on "daisy chain " mode

If the line is missing , the factory setting value by default is used it has to say 0, no monitoring.
See chapter 6 for informations on RS232 protocol.

5.6 - Choose of the playback folder when powering - #BOOT:xxx

Sometimes, it can be necessary to define the folder that will be used when powering. By default, the directory 000 is used as a starting folder.

Command line:
#BOOT:xxx xxx a number between 000 et 999

Example:
#BOOT:015 the player will read the content of the 015 folder when powering..

If the line is missing, the " factory setting" value by default will be used , 000 for the folder 000.
If the folder does not exist , the player turns into standby mode and waits for an instruction

5.7 - Assign particular functions to the inputs - # INPUTxxx:function

By default, input contacts trigger folders in order to read their content. For a better versatility of the player, it is possible to assign input contacts to others functions.

PLAY : Reading known file
STOP : Stop the current reading
NEXT_TRACK :. Reading of the next file of the folder currently read.
PREV_TRACK : Reading of the previous of the folder currently read.
VOLUME_PLUS : Increase the volume from one step
VOLUME_MINUS : Decrease the volume from one step
FOLDERxxx : Jump to the folder xxx - xxx can be a value between 000 and 999
RSxxx : Send the line n° xxx of the file " serial.txt " on the output RS232 (with xxx from 000 to 999).

Command line :

#INPUTxx:function xx on input from 01 to 15 - function among the list below

Example of a command keypad using the 4 inputs.

#INPUT01:PREV_TRACK	previous file playback
#INPUT02:STOP	stop the playback
#INPUT04:PLAY	launch playback
#INPUT08: NEXT_TRACK	next file playback

The 4 inputs are amongst themselves combinable in order to offer 15 different functions upon the following table below.

#INPUT01 -> input 1
#INPUT02 -> input 2
#INPUT03 -> input 1+2
#INPUT04 -> input 3
#INPUT05 -> input 1+3
#INPUT06 -> input 2+3
#INPUT07 -> input 1+2+3
#INPUT08 -> input 4
#INPUT09 -> input 1+4
#INPUT10 -> input 2+4
#INPUT11 -> input 1+2+4
#INPUT12 -> input 3+4
#INPUT13 -> input 1+3+4
#INPUT14 -> input 2+3+4
#INPUT15 -> input 1+2+3+4

Example of functions with input contacts combination
#INPUT03:RS001
#INPUT05:VOLUME_PLUS
#INPUT10:VOLUME_MINUS
#INPUT14:FOLDER999

5.8 - Assign particular functions to buttons - #BUTTONx:function

The two front buttons are dedicated by default to the volume setting. With the file config.txt, it is possible to assign them other functions.

PLAY : Reading of the last known file
STOP : stop of the current reading
NEXT_TRACK : Reading of the next file of the folder currently read.
PREV_TRACK : Reading of the previous file of the folder currently read.
VOLUME_PLUS : Increase the volume from one step
VOLUME_MINUS : Decrease the volume from one step
FOLDERxxx : Jump to the folder xxx - xxx can be a value between 000 and 999
RSxxx : send the line n° xxx of the file " serial.txt " on the output RS232 (with xxx from 001 to 999).

Command line:

#BUTTONx:function x the number of the button 1 or 2 - function among the list below:

Example:

#BUTTON1:NEXT_TRACK	The button 1 is assigned to the function " next file "
#BUTTON2:STOP	The button 2 is assigned to the function " STOP"

Note: The buttons 1 and 2 of the infrared remote control fulfil the same functions that the ones assigned respectively to front buttons 1 and 2.

Example of a configuration file:

```
#ID:002
#VOLUME:48
# POWER:1
#BAUDRATE:9600
#RS_MONITORING:1
#BOOT:005
#INPUT01:PREV_TRACK
#INPUT02:STOP
#INPUT04:PLAY
#INPUT08:NEXT_TRACK
#BUTTON1:STOP
#BUTTON2:PLAY
```

Function	**Value**	**By default**
#ID:xxx	xxx = from 001 to 127	001
#VOLUME:xx	xx = from 0 to 64	Dernière valeur utilisée
#POWER:x	0 : disabling the energy saving mode 1: enabling the enrgy saving mode	0
#RS_MONITORING:x	0 : no sending mode 1 : daisy chain mode 2 : monitoring mode 3 : advanced monitoring mode	0
#BOOT:xxx	xxx = from 000 to 999	000
#INPUTxx:function	xx = 0 up to 15 PLAY STOP NEXT_TRACK PREV_TRACK FOLDERyyy - yyy : 000 up to 999 VOLUME_PLUS VOLUME_MINUS RSyyy - yyy: 001 up to 999	INPUT01:FOLDER001 INPUT02:FOLDER002 INPUT03:FOLDER003 INPUT04:FOLDER004 INPUT05:FOLDER005 INPUT06:FOLDER006 INPUT07:FOLDER007 INPUT08:FOLDER008 INPUT09:FOLDER009 INPUT10:FOLDER010 INPUT11:FOLDER011 INPUT12:FOLDER012 INPUT13:FOLDER013 INPUT14:FOLDER014 INPUT15:FOLDER015
#BUTTONx:function	x = 1 or 2 PLAY STOP NEXT_TRACK PREV_TRACK FOLDERyyy - yyy : 000 up to 999 VOLUME_PLUS VOLUME_MINUS RSyyy - yyy : 001 up to 999	BUTTON1:VOLUME_MINUS BUTTON2:VOLUME_PLUS
#BAUDRATE:xxxxx	9600, 19200, 38400	19200

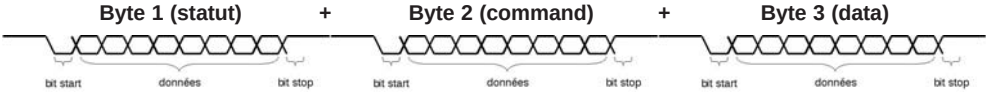
6 - RS232 serial link protocol

The MicroPlayer can communicate with other devices by receiving instructions onto the Rx input or transferring data through its Tx output. The player complies with the RS232 norm (see annex for features).
Value by default: 19200 Bauds (modifiable through config.txt file) - 8 bits - no parity - 1 bit start - 1 bit stop

6.1 - Reception Protocol

With the input protocol, the player can receive instructions to launch a folder playback or sets the volume control. On the other hand , in a framework of the using of several players on the same link, the player answers its own number (defined in the file congig.txt, see chapter related) or to a general command

The reception protocol is made of a 3 bytes frame.



Reminder:
- a byte is composed of 8 bits: b7 b6 b5 b3 b2 b1 b0
- a binary representation is noted: 10000000b or in hexadecimal : 80h

Byte 1 : Status - 1xxxxxxxb
The byte status is a synchonization information of frame. Its Byte 8 (b7) is always at 1. All others bytes (commands or datas) have their byte 8 to 0.

b7 = 1: refer to a status byte
b6 - b0: identification of the player to be addressed from 001 to 127 (000001b - 1111111b)

- The address of the player is by default (ID) 001. You can modify it in the conffiguration file.
- Several players may have the same identification number to create groups.
- Identification 000 is the "overall" code, all players are concerned by the command (unique command for all the players).
Example:

80h = "overall" code for all the players
81h = player n°001
9Eh = player n° 030
FFh = player n°127

Byte 2 (Command) 0xxxxxxxb + Octet 3 (Data) 0xxxxxxxb
The Byte 2 is a command and the byte3 is a data that completes the command byte. A command byte is always followed by a byte of data. A full frame is therefore made of 3 bytes.

b7 = 0 : refer to a byte of command or data
b6, b5, b4 : bank selection for the directory jump command
b3, b2, b1, b0 : command code sent to the player

List of commands:

00h: not used
X1h (01h to 71h): "Go to" folder command
02h: transport bar command
03h: volume control command

● **00h - 00000000b: not used**

● **01h à 71h - 0xxx0001b: command of jump towards a folder**

The folder is designated by the bank number and the next data byte.

xxx is the bank number. To launch 1000 folders (from 000 to 999) , it is necessary to divide this number in several directory ranges (bank) of 128 values.

0xxx0001b: xxx= bank number depending of the folder number
01h - 00000001b: Bank 0 -> from 000 to 127
11h -00010001b: Bank 1 -> from 128 to 255
21h - 00010001b: Bank 2 -> from 256 to 383
31h - 00110001b: Bank 3 -> from 384 to 511
41h - 01000001b: Bank 4 -> from 512 to 639
51h - 01010001b: Bank 5 -> from 640 to 767
61h - 01100001b: BanK 6 -> from 768 to 895
71h - 01110001b: Bank 7-> from 896 to 999
(The binaries values beyond 999 are ignored)

Method of calculation:
1) bank = value in the above table depending on the folder number
2) value = folder number - (bank x 128)

Example of a frame triggering folder 278 in the player number 1:
Folder number = 278
1) 278 is in bank 2 (from 256 to 383)
2) Value = 278 - (2 x 128) = 22

The frame is:81 21 16
Byte 1: 81h - 10000001b: status byte, player number 001
Byte 2 :21h - 00100001b: bank 2, command of jump towards a folder
Byte 3 :16h - 00010110b : value 22 (reference of folder 278 in bank 2)

● **02h - 00000010b: Transport bar command**
The transport function is defined by the data byte as follows:

value of the datas of the byte 3 (datas)
01h - 00000001b : Playback
02h - 00000010b: Stop
03h - 00000011b: Next file in the current directory
04h - 00000100b: Previous file in the current directory
Note: the other values are ignored.

Example of the full frame: 81 02 01

Octet 1 : 81h - 10000001b : status byte, player 001
Octet 2 : 02h - 00100001b : transport bar command
Octet 3 : 01h - 00010110b : playback command

● **03h - 00000011b: volume control command**
The value of the volume is defined by the datas byte that follows:

00h - 00000000b : mute - volume at 0
20h - 00100000b : half volume - value 32
40h - 01000000b : maximum volume - value 64
Note : the others values are ignored

Example of the full frame : 81 03 0E
Byte1 : 81h - 10000001b : status byte, plater number 001
Byte2 : 03h - 00000011b : volume command
Byte3 : 0Eh - 00001110b : volume setting at 14

6.2 - Transmission Protocol - Monitoring

The MicroPlayer MKII can convey several kind of datas onto RS232 port.

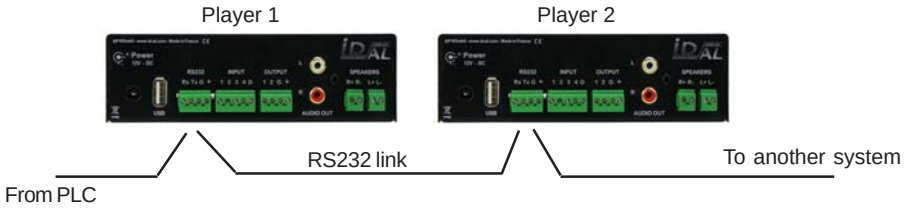
- Personalised datas sent by tags [RSxxx] (see chapter "naming of files and folders).
- Command datas of the player sent in " Daisy Chain" mode
- Status datas of the player sent in mode "monitoring" and "advanced monitoring"

To define the kind of sent datas through RS232, 4 monitoring modes exist.

Mode 2 and 3 are defined in the configuration menu (see chapter configuration menu)
The "Daisy Chain " mode and the monitoring mode are added up with the sending information mode through tags.

Mode 0: no monitoring mode
Only the datas sent through tags [RSxxx] are sent to TX output.

Mode 1: "Daisy Chain"
In this mode, any information received on the Rx line is resent out as received onto the line Tx.
This mode allows to chain up several players the ones after to the others. By connecting Tx output of the first player to the Rx input of the second player and so on , the information received by the first player on its Rx socket is resent to the others players in chain. Caution ! if numerous players are connected in this way, a slight delay can exist on the end of the chain.



Mode 2: "Monotoring" mode
In this mode, the player send informations onto the Tx output depending on the actions executed. This mode do not allow to chain up the players. The player allows to a PLC, a computer, a security system, to know the status of the player and to make operating tests. In this mode, the player send datas of its status upon each change.
The transmission protocol is made from a 3 bytes frame, similar to the reception protocol.

Byte 1: Status
>b7 = 1 : designates status byte
>b6 - b0 : designation of the emitter player from 001 to 120 (000001b - 1111111b)

The address (ID) of the player is by default 001 it has to say 81h. Modifiable in the configuration menu.

Byte 2 (Command)
Unique value : 00h - 00000000b

Byte 3 (Data)

00h - 00000000b : Player ready - The player reports that it is ready and available - when powering on, and operating.

01h - 00000001b : Not used
02h - 00000010b : Not used

03h - 00000011b : : Indicates the playback start - This code is sent when the player starts the playback

04h - 00000100b : Indicates end of playback - The player highlights it has finished the reading of the current file

Others values are not used.

Example of a process to check the good working of the player by reading an audio file.

Preparation: The player's number is 001
Create a folder "001" in which is copied an audio file"My file.mp3"

Launch folder 001 playback (with dry contact 1 trigger or with the sending of a command RS232).
When the player turns into playback, a frame is emitted indicating the beginning of the playback :
81h 00h 03h
At the end of the playback, a frame is emitted by the player indicating the end of the playback :
81h 00h 04h

Mode 3: "Advanced Monotoring" mode
The advanced mode have the same functions that the standard monitoring mode but adds a permanent sending function of its status. A frame is sent every 250ms describing the status of the player among two possibilities.
01h - 00000001b: sends a frame indicating that the player do not read and wait for an instruction.
02h - 00000010b: sends a frame indicating that the player reads a file.

This mode is used in a framework of security message management. A frame fault highlights an error and allows to solve the fault.

7 - From the MicroPlayer to the MicroPlayer MKII

The MicroPlayer MKII has evolved and the file/folder naming mode has changed. To ease this proceed from the old model to the new one, please find hereafter some elements that might help in this proceed.

Naming of the folders:

Loop playback of a folder in a random mode:
001001R -> 001[J001]
or
001001R -> 001[J001][RND]

Loop playback of a folder in a sequential mode:
001001S -> 001[J001][SEQ]

Random playback of a folder then the player stops
001###R -> 001

Naming of the files:

Jump in another folder after the reading of the file, the file can be interrupted:
001001T.mp3 -> [J001] my file.mp3

Jump in another file after the reading of the file, the file can NOT be interrupted:
001001N.mp3 -> [J001][NT] my file.mp3

Files playback in a sequential mode, files can be interrupted:
001###N.mp3 -> 001.mp3
002###N.mp3 -> 002.mp3
003###N.mp3 -> 003.mp3
004###N.mp3 -> 004.mp3

Without any option, no change, files can carry any name:
my file.mp3 -> my file.mp3

Annex A - Characteristics

• Power supply:
Nominal voltage : 12V DC
Supply range : 9V to 14V DC

• 12V supply consumption:
- Stand By with active energy saving mode: 27 mA
- On operating (line output - amplified output not used) : 90mA

• Amplified audio iutput:
Voltage 12V - THD 10% - Load 4 Ohms: 2 x 18W
Voltage 12V - THD 1% - Load 4 Ohms: 2 x 14W
Voltage 14V - THD 10% - Load 4 Ohms: 2 x 22W
Voltage 14V - THD 1% - Load 4 Ohms: 2 x 18W

Voltage 12V - THD 10% - Load 8 Ohms: 2 x 10W
Voltage 12V - THD 1% - Load 8 Ohms: 2 x 8W
Voltage 14V - THD 10% - Load 8 Ohms: 2 x 14W
Voltage 14V - THD 1% - Load 8 Ohms: 2 x 10W

Size :
Width : 143mm (1/3 rack) - Height: 43mm
Depth without connectors: 66mm
Depth with connectors and button : 98mm

Weight : 200g

Table of equivalence of volume:

0	MUTE	22	-42dB	44	-20dB
1	-63dB	23	-41dB	45	-19dB
2	-62dB	24	-40dB	46	-18dB
3	-61dB	25	-39dB	47	-17dB
4	-60dB	26	-38dB	48	-16dB
5	-59dB	27	-37dB	49	-15dB
6	-58dB	28	-36dB	50	-14dB
7	-57dB	29	-35dB	51	-13dB
8	-56dB	30	-34dB	52	-12dB
9	-55dB	31	-33dB	53	-11dB
10	-54dB	32	-32dB	54	-10dB
11	-53dB	33	-31dB	55	-9dB
12	-52dB	34	-30dB	56	-8dB
13	-51dB	35	-29dB	57	-7dB
14	-50dB	36	-28dB	58	-6dB
15	-49dB	37	-27dB	59	-5dB
16	-48dB	38	-26dB	60	-4dB
17	-47dB	39	-25dB	61	-3dB
18	-46dB	40	-24dB	62	-2dB
19	-45dB	41	-23dB	63	-1dB
20	-44dB	42	-22dB	64	0dB
21	-43dB	43	-21dB		

Annexe B - Functionalities

Audio characteristics
- Reads MP3 files mono/stereo (MPEG ½ layer 3), 44.1KHz / 48KHz, from 32kbit/s to 320kbits/s
- Reads CBR (Constant Bit Rate) and VBR (Variable Bit Rate) files
- Reads WAV files mono/stereo 16 bits : 44.1kHz
- Volume setting in 64 steps from 00 to 64

Mass storage
- Accept Flash SD SD/HC memory cards only formatted in FAT16 and FAT32
- Accept USB flash drive only formatted in FAT16 and FAT32
- Accept files with long names (63 characters max including extension)
- Accept 1000 directories at the root, containing up to 999 files each

Interfacing and connectivity
- 2 configurable buttons in front of the player
- LED status indicator
- Infrared sensor- Play, Stop, Next, Previous, Volume +, Volume –, 2 configurable buttons
- USB 2.0 Full Speed (12Mb/s), standard driver «mass storage», connector type B
- Serial link RS232 - 19200 bauds (configurable), 8 bits, no parity, 1 bit start , 1 bit stop
- 4 digital inputs opto-coupled on removable terminal block **(RTB)** 3.81mm
- 2 digital output mosfet 500 mA on removable terminal block **(RTB)** 3.81mm
- A line level stereo audio output on a RCA standard connector – line level 0dB
- Amplified stereo output on connector on a removable terminal block **(RTB)** 3.81 mm

Annexe C - Infrared remote control

The MicroPlayer MKII can be controlled with an infrared remote control as an infrared sensor is fitted in the front of the player.

With this remote control you can:
Transport command: Play / Stop / Next / Previous
Volume command: Change volume up/down
Triggering key: Same function than the front buttons 1 and 2 (configurable button).

http://www.id-al.com